

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence during pendency of filed application)</i>		U.S. Department of Commerce Patent and Trademark Office	Application Number	10/688,575
			Filing Date	October 16, 2003
			First Named Inventor	J. Elon Graves
			Group Art Unit Number	Not yet known
			Examiner Name	Not yet known
Total Number of Pages in This Submission		6 *	Attorney Docket Number	23236-07284

ENCLOSURES (check all that apply)	
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Attorney/Reg. No.:	Michael W. Farn, Reg. No. 41,015	Dated:	December 30, 2003

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: J. Elon Graves, Malcolm J. Northcott and J. Christopher Shelton  
APPLICATION NO.: 10/688,575  
FILING DATE: October 16, 2003  
TITLE: Combined Wavefront Sensor and Data Detector for a Free Space  
Optical Communications System with Adaptive Optics  
EXAMINER: Not yet known  
GROUP ART UNIT: Not yet known  
ATTY. DKT. NO.: 23236-07284

**CERTIFICATE OF MAILING**

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Dated: December 30, 2003

By: Michael W. Farn  
Michael W. Farn, Reg. No. 41,015

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**INFORMATION DISCLOSURE STATEMENT**  
**Under 37 CFR §§ 1.56 and 1.97-98**

SIR:

Pursuant to the provisions of 37 CFR §§ 1.56 and 1.97-98, enclosed herewith is modified form PTO/SB/08A listing references for consideration by the Examiner. Enclosed is a copy of each listed reference, which is not a U.S. Patent Document, that may be material to the examination of this application, and for which there may be a duty to disclose.

The filing of this Information Disclosure Statement shall not be construed as a representation regarding the completeness of the list of references, or that inclusion of a reference in this list is an admission that it is prior art or is pertinent to this application, or that a search has been made, or as an admission that the information listed is, or may be considered to be, material to patentability, or that no other material information exists, and shall not be construed as an admission against interest in any manner.

This Information Disclosure Statement is being filed:

- ☒ within three months of the filing date of the application, or date of entry into the national stage of an international application, or before the mailing date of a first office action on the merits, whichever event last occurred;

- ☐ before the mailing of a first official action after the filing of a request for continued examination (RCE) under 37 CFR § 1.114;
- ☐ after three months of the filing date of this national application or the date of entry of the national stage in an international application, or after the mailing date of the first official action on the merits, whichever event last occurred, but before the mailing date of the first to occur of either: (1) a final action under 37 CFR § 1.113; or (2) an action that otherwise closes prosecution in the application, and:
  - ☐ attached hereto is the fee set forth under 37 CFR § 1.17(p) for submission of this Information Disclosure Statement under 37 CFR § 1.97(c); OR
  - ☐ Applicant certifies pursuant to 37 CFR § 1.97(e) that:
    - ☐ each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; OR
    - ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement;
- ☐ on or before the payment of the issue fee but after the mailing date of the first to occur of either: (1) a final action under 37 CFR § 1.113; (2) a notice of allowance under 37 CFR § 1.311; or (3) an action that otherwise closes prosecution in the application, and:
  - ☐ Applicant certifies pursuant to 37 CFR § 1.97(e) that:
    - ☐ each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or
    - ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a

foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement; AND

- ☐ attached hereto is the fee set forth under 37 CFR §1.17(p) for submission of this Information Disclosure Statement under 37 CFR § 1.97(c); OR
- ☐ after the payment of the issue fee. Applicant requests that the information contained in this Information Disclosure Statement be placed in the file according to 37 CFR § 1.97(i), although the information may not be considered by the USPTO.
- ☐ This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior application No. APPLICATION NO., filed on DATE FILED, and the references cited therein are hereby referenced, but are not required to be provided in this application under 37 CFR § 1.98(d).
- ☐ Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not received by any individual designated in 37 CFR § 1.56(c) more than thirty days prior to the filing of this Information Disclosure Statement. 37 CFR § 1.704(d).
- ☒ Applicant submits that no fee is required for the consideration of this Information Disclosure Statement.

Consideration of the listed references and favorable action are solicited.

Respectfully submitted,  
J. ELON GRAVES et al.

Dated: December 30, 2003

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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application No.	10/688,575
				Filing Dat	October 16, 2003
				First Named Inventor	J. Elon Graves
				Art Unit	Not yet known
				Examiner Name	Not yet known
Sheet	1	of	2	Attorney Docket Number	23236-07284

U.S. PATENT DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Document No. Number – Kind Code <sup>2</sup> (if known)	Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		US-5,233,174 A	08-03-1993	Zmek
		US-5,329,322 A	07-12-1994	Yancey
		US-5,576,780 A	11-19-1996	Yancey
		US-5,777,719 A	07-07-1998	Williams et al.
		US-5,949,521 A	09-07-1999	Williams et al.
		US-6,023,057 A	02-08-2000	Gaffard et al.
		US-6,452,145 B1	09-17-2002	Graves et al.

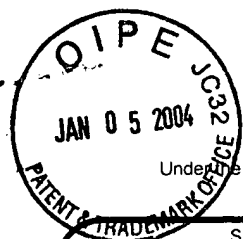
FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> – Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T <sup>6</sup>

OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>	
	1	Dreher, Andreas W. et al., "Active optical depth resolution improvement of the laser tomographic scanner," <i>Applied Optics</i> , Vol. 28, No. 4, February 15, 1989, pages 804-808.		
	2	Graves, J. Elon et al., "First Light for Hokupa'a: 36 Element Curvature AO System at UH," <i>Proceedings of SPIE</i> Vol. 3353, March 1998, pages 34-43.		
	3	Graves, J.E. et al., "Latest Results from the University of Hawaii Prototype Adaptive Optics System," <i>Univ. Hawaii Laser Guide Star Adaptive Optics Workshop: Proceedings--Vol. 1</i> (March 10-12, 1992), pages 511-521.		
	4	Roddier, C. et al., "New optical testing methods developed at the University of Hawaii; results of ground-based telescopes and hubble space telescope," <i>SPIE</i> , Vol. 1531, <i>Advanced Optical Manufacturing and Testing II</i> (1991), pages 37-43.		

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.  
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PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**Compleat if Known**

Application No.	10/688,575
Filing Date	October 16, 2003
First Named Inventor	J. Elon Graves
Art Unit	Not yet known
Examiner Name	Not yet known
Attorney Docket Number	23236-07284

Sheet 2 of 2

### OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
	5	Roddier, Francois et al., "A Simple Low-Order Adaptive Optics System for Near-Infrared Applications," <i>Publications of the Astronomical Society of the Pacific</i> , Vol. 103, No. 659, January 1991, pages 131-149.	
	6	Roddier, Francois, "Curvature sensing and compensation: a new concept in adaptive optics," <i>Applied Optics</i> , Vol. 27, No. 7, April 1, 1998, pages 1223-1225.	
	7	Roddier, Francois, "Wavefront sensing and the irradiance transport equation," <i>Applied Optics</i> , Vol. 29, No. 10, April 1, 1990, pages 1402-1403.	

Examiner Signature		Date Considered	
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23236/07284/DOCS/1399655.2